"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

1. SAVIN, F.S.

2. USSR (600)

4. Bee Culture - Queen Rearing

7. Flight capacity of a queen. Pchelovodstvo. 29. no. 11. 1952.

9. Monthly List of Russian Accessions, Library of Congress, February 1953. Unclassified.

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, Gh.

Distr: 4E2c

The magnetic viscosity of carbon steels as a function of fatigue. Gh. Iliescu, D. Bărbulescu, Gh. Savin, and V. Petrescu (Polytech. Inst. Iaşi, Romania). *Bul. inst. politeh. Iaşi*, [8], 4, 269–82(1958).—The modifications of the magnetic viscosity of C steels, owing to fatigue produced by rotative flexion, have been studied, by measuring the amplitude of the magnetic viscosity at a point of coercitive field (max. of irreversible differential susceptibility, hence max. of fluctuation viscosity) at equal time intervals (3 sec.) after cessation of the magnetic field variations. The measurements have been performed upon a fatigued sample (after successive intervals of approx. 2×10^6 cycles of rotative flexion) and a nonfatigued control sample, introduced within a magnetic circuit, which is closed by 2 sliding gates. The results indicate that the magnetic viscosity of fluctuation is influenced by the degree of fatigue, which supports the belief that structural changes take place in the fatigued metal. The magnetic viscosity increases with the no. of cycles (more for hard steels than for mild steels); and its value is easily variable in different samples of the same material, probably because of eventual internal defects in the steel. Another phenomenon has been observed, an increasing tendency of the coercitive field. The increase of viscosity at the coercitive field is due to a process of straightening of the back of the hysteresis cycle, i.e. an increase in slope.

M. Lapidot

6

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

RUMANIA/Cultivated Plants - Fruits and Berries. M-5

Abs Jour : Ref Zhur - Biol., No 3, 1958, 11027

the best average yields. The vines with the best production were those grafted onto Ripariya Gloriya and Ripariya x Rupestris 101-14.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN G.

Rumania/Physiology of Plants. Growth and Development I-5

Abs Jour : Ref Zhur-Biologiya, No 2, 1958, 5688

Author : V. Petrescu, G. Savin, E. Braiscu, N. Cojeneanu
Inst : Not given
Title : On the Effect of Electromagnatic Waves on the Growth of Seeds and the Further Development of Plants (Preliminary Report)

Orig Pub : Bul. stiint. Acad. RPR, sec. mat. si. fiz., 1956, 8, No 2, 415-424

Abstract : Dry and moistened seeds of corn and beans were subjected to interrupted action of ultra-short electromagnatic ways (UEV) with λ 6 or 12μ. The treatment with UEV with λ 12μ arrested the growth and development of the plants. A positive effect was obtained as a result of the interrupted treatment with UEV with 6 for a period of

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G. [Savin, H.M.]

Further development of the problem of the strength of materials.
Prykl.mekh. 8 no.3:233-236 '62. (MIRA 15:6)
(Strength of materials)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G. (Rumynskaya Narodnaya Respublika); BERBULESKU, D. [Barbulescu, D.] (Rumynskaya Narodnaya Respublika); VASIL'CHUK, M. (Rumyanskaya Narodnaya Respublika)

New method for measuring total resistance by impedance and impedance angle. Izm. tekh. no.2:42-43 F '63. (MIRA 16:2)
(Electronic measurements)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

ACC NR: AP7004721 (A) SOURCE CODE: UR/0413/67/000/001/0005/0005

INVENTOR: Orro, P. I.; Savin, G. A.; Savchenko, O. N.; Chub, I. M.; Kuznetsov, Ye. D.

ORG: None

TITLE: A method for drawing steel tubes on a long mandrel. Class 7, No. 189788

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 1, 1967, 5

TOPIC TAGS: pipe, metalworking, metal drawing

ABSTRACT: This Author's Certificate introduces a method for drawing steel pipes on a long mandrel. Productivity is increased and provision is made for extraction of the mandrel from the tube after completion of the drawing process without rolling by drawing the tubes simultaneously through two plates--a working plate and an auxiliary plate located directly behind the working plate.

SUB CODE: 13/ SUBM DATE: 29Jun63

Card 1/1 UDC: 621.774.372

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.A.; MEDVINSKIY, M.D.

Developing a technique of pipe drawing on drum mills. Metallurg 7 no.9:16-19 S '62. (MIRA 15:9)

1. Ukrainskiy nauchno-issledovatel'skiy trubnyy institut.
(Pipe mills)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

ORRO, P.I., kand.tekhn.nauk; SAVIN, G.A., inzh.

Using a floating mandrel for the drawing of medium length carbon tubes. Stal' 23 no.6:540-544 Je '63. (MIRA 16:10)

1. Ukrainskiy nauchno-issledovatel'skiy trubnyy institut.

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.A., inzh.

Determining the length of the cylindrical part of a floating mandrel. Proizv. trub no.10:57-61 '63. (MIRA 17:10)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

ORRO, P.I., kand. tekhn. nauk; SAVIN, G.A., inzh.; ARANOVICH, A.V., inzh.

Permissible deformations during pipe drawing on a floating mandrel. Proizv. trub. no.12:51-56 '64. (MIRA 17:11)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

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L 61034-65 EWT(m)/EWA(d)/EWP(t)/EWP(k)/EWP(z)/EWP(b)/EWA(c) Pf-4 JD/HW

ACCESSION NR: AR5017427 UR/0137/65/000/006/D034/D034

47
B

SOURCE: Ref. zh. Metallurgiya, Abs. 6D223

AUTHOR: Chuyko, P. I.; Savin, G. A.; Kolesnikov, V. N.; Putyatina, Z. V.; Isayev, I. N.

TITLE: Production of 40 x 2.0 and 40 x 1.5 mm tubes from stainless steel by cold drawing on a long mandrel

CITED SOURCE: Sb. Proiz-vo trub. Vyp. 14. M., Metallurgiya, 1964, 40-43

TOPIC TAGS: pipe, stainless steel, metal drawing, metal heat treatment, metal rolling, organic lubricant

TRANSLATION: Experiments confirm the production of thin wall stainless tubes from billets with a diameter greater than 40 mm, by drawing on a long mandrel with subsequent gaging by drawing without a mandrel, and indicate the possibility of producing such tubes without intermediate heat treatment by drawing on a long mandrel in conjunction with rolling on machines of the oblique mill type. The best industrial lubricant for drawing stainless steel tubes on a long mandrel is a combination of oxalate and soap coatings. A. Leont'yev

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L 61034-65

ACCESSION NR: AR5017427

SUB CODE: MM ENCL: 00

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.N.

28682

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S/021/60/000/007/005/009
D211/D305

AUTHORS: Savin, H.M., Academician AS UkrSSR, and Horoshko, O.O.

TITLE: Integro-differential equations of the motion of objects with variable dimensions

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR, Dopovidi, no. 7, 1960, 892 - 898

TEXT: The aim of the authors is to show, with a few examples, how to change the differential equations of motion with boundary conditions into integro-differential equations: this will permit the use of integral equation methods in conjunction with asymptotic methods: 1) Differential equations of an elastic thread with a variable length, and different conditions on its ends could, according to the author in a previous article (Ref. 1: Prykladna mekhanika, 1, 1, 5, 1955) be as follows:

$$\frac{q}{g}\frac{\partial^2 X}{\partial t^2} - \frac{\partial P}{\partial x} - q = 0 \qquad (3)$$

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where

$$P(x, t) = EF \frac{\partial u(x, t)}{\partial x}, \qquad (2)$$

q - the weight per unit length, E - modulus of elasticity, F - the area of the cross-section of the elastic thread, and u(x, t) - the absolute extension of the length x,

$$X(x, t) = x + u(x, t) - \int_0^t v_c(t)dt \qquad (1)$$

$v_i(t)$ - the linear velocity on the surface of the rotating shaft. Boundary conditions are for $x = \ell_0$

$$\left(\frac{Q}{g}\frac{\partial^2 u}{\partial t^2} + EF\frac{\partial u}{\partial x}\right)_{x=l_0} = Q\left(1 + \frac{\dot{v}_c}{g}\right). \qquad (5)$$

and for $x = \ell$

$$u(l,t) = \int_0^t \left(\frac{\partial u}{\partial x}\right)_{x=l} \frac{dl}{dt}\,dt; \quad u(l,t) = \int_0^t \left(\frac{\partial u}{\partial x}\dot{l} + b\frac{\partial u}{\partial t}\right)_{x=l} dt, \qquad (9)$$

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where b = 0 if there is no slipping of the thread on the shaft. By multiplying

$$\frac{q}{g}\frac{\partial^2 u}{\partial t^2} = EF\frac{\partial^2 u}{\partial x^2} + q\left(1 + \frac{\dot{v}_c}{g}\right) \tag{4}$$

by the function $k(x_1 s_1 t)$ symmetrical with respect to x and s

$$K(x,s,t) = \begin{cases} (s-l)/EF & s \leq x, \\ (x-l)/EF & s > x, \end{cases} \tag{13}$$

and integrating one obtains

$$u(x,t) = -\int_{l(t)}^{l_0} K(x,s,t)\frac{q}{g}\left(\frac{\partial^2 u}{\partial t^2} - g - \dot{v}_c\right)ds - K(x,l_0,t)\frac{Q}{g}\left(\frac{\partial^2 u}{\partial t^2} - g - \dot{v}_c\right)_{x=l_0} + \int_0^t \frac{\partial u(l,t)}{\partial x}\,l\,dt. \tag{15}$$

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28682

Integro-differential equations ... S/021/60/000/007/005/009
D211/D305

Let $v(x_1 t)$ be a new function connected with $u(x_1 t)t$ by relation

$$u(x,t) = v(x,t) + \int_0^t \left(\frac{\partial u}{\partial x}\right)_{x=l} \frac{dl}{dt}\, dt. \tag{16}$$

or

$$u(x,t) = v(x,t) + \int_0^t \left(\frac{\partial v(x,t)}{\partial x}\right)_{x=l} \frac{dl}{dt}\, dt. \tag{17}$$

For this function equation (15) reduces to

$$v(x,t) = -\int_{l}^{l_0} K(x,s,l)\frac{q}{g}\left(\frac{\partial^2 v}{\partial t^2} - g - \dot{v}_c\right) ds - K(x,l_0,l)\frac{Q}{g}\left(\frac{\partial^2 v}{\partial t^2} - g - \dot{v}_c\right)_{x=l_0} - \frac{d}{dt}\left(\frac{dl}{dt}\cdot\frac{\partial v}{\partial x}\right)_{x=l}\left[\int_{l}^{l_0} K(x,s,l)\frac{q}{g}\, ds + K(x,l_0,l)\frac{Q}{g}\right], \tag{18}$$

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and the critical conditions take the form

$$v(x,0)=f_1(x);\quad \frac{\partial v(x,0)}{\partial t}=f_0(x)-f_1'(0)\frac{dl(0)}{dt}. \tag{19}$$

A similar formula was obtained in the case where $b \neq 0$. The authors consider also the case where Eq. (2) is not satisfied, i.e. for the imperfect elastic thread. 2) A differential equation is also given for the transversal oscillations of the beam. The author obtained integro-differential equation of the motion of the beam of variable length in the form

$$u(x,t)=-\int_0^{l(t)} K(x,s,t)\frac{q}{g}\cdot\frac{\partial^2 u(s,t)}{\partial t^2}\,ds. \tag{27}$$

3) Similarly, the differential equation of motion of a variable string was treated; there

$$\frac{q}{g}\cdot\frac{\partial^2 u}{\partial t^2}=T\frac{\partial^2 u}{\partial x^2} \tag{28}$$

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$$u(0,t) = u(l,t) = 0, \tag{29}$$

$$K(x,s,l) = \begin{cases} s(l-x)/EF & s \leqslant x, \\ x(l-s)/EF & s \geqslant x, \end{cases} \tag{30}$$

The integro-differential equation was

$$v(x,t) = -\int_0^{l(t)} K(x,s,l)\frac{q}{g}\cdot\frac{\partial^2 v}{\partial t^2}\,ds - \frac{\partial^2 f(l,v)}{dt^2}\int_0^{l(t)} K(x,s,l)\frac{q}{g}\,s\,ds,$$

$$f(l,v) = \frac{1}{l}\int_0^l\left[\int_0^l \frac{1}{l}\cdot\frac{d}{dt}\left(\frac{\partial v}{\partial x}\right)_{x=l} dt\right] l\,dt. \tag{31}$$

The equivalence of differential and integro-differential forms for the given problems was proved i.e. any solution of a differential form is a solution of some corresponding integro-differential form and vice-versa. This equivalence allows one to apply the variation methods or methods of integral equations, together with asymptotic

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D211/D305

Integro-differential equations ...

methods. There are 4 figures and 2 Soviet-bloc references.

ASSOCIATION: Instytut mekhaniki AN UkrSSR (Institute of Mechanics AS UkrSSR)

SUBMITTED: November 12, 1960

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

29183
S/021/60/000/010/005/016
D251/D303

10 6000 2607, 1327

AUTHORS: Savin, G.N., Academician AS UkrSSR, and Wang Po Fy, H.A.

TITLE: Stress concentration in a spherical shell around an elliptical hole of small eccentricity

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR. Dopovidi, no. 10, 1960, 1340 - 1343

TEXT: For a spherical shell in equilibrium under a uniform internal pressure q = const, the state of stress, and deformation near some hole is given by $\Phi = w + ig\varphi$, where φ and w are the functions of stress and deflection,

$$g = \frac{\sqrt{12(1 \quad \nu^2)}}{Eh^2}, \qquad 2 = \frac{\sqrt{12(1 - \nu^2)}}{hR}$$

and R is the radius of the shell. Φ satisfies

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$$\nabla^2 \nabla^2 \Phi + i\nu^2 \nabla^2 \Psi = 0 \qquad (1)$$

Φ and w must also satisfy the boundary conditions on the hole, and the stress and deformation must approach zero at infinity. The projection of the hole upon a plane will be an ellipse. Taking an elliptic system of coordinates $x + iy = c\,\mathrm{ch}(\xi + i\eta)$, (1) becomes

$$\nabla^2 = \frac{1}{H^2}\left\{\frac{\partial^2}{\partial\xi^2} + \frac{\partial^2}{\partial\eta^2}\right\}, \quad \frac{1}{H^2} = \frac{2}{c^2(\mathrm{ch}\,2\xi - \cos 2\eta)}. \qquad (2)$$

The solution satisfying the boundary conditions at infinity is of the form

$$\Phi = i\,\mathrm{gd}\ln(\mathrm{ch}\,2\xi + \cos 2\eta) + \sum_{n=1}^{\infty} e^{-2n\xi}(a_n + ib_n)\cos 2n\eta + \sum_{n=0}^{\infty}(A_n + iB_n)\,Me_n^{(1)}(\xi)\,ce_n(\eta). \qquad (4)$$

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For a hole of small eccentricity it is sufficient to take the first terms of the series only, hence

$$\ln(\operatorname{ch} 2\xi + \cos 2\eta) \simeq \ln \operatorname{ch} 2\xi + \frac{\cos 2\eta}{\operatorname{ch} 2\xi} + \ldots$$

$$Me_0^{(1)}(\xi)\, ce_0(\eta) \simeq \left(1 - \frac{\lambda}{2}\cos 2\eta\right) H_0^{(1)}(\sqrt{\lambda} e^{\xi}) + \ldots \qquad (5)$$

$$Me_2^{(1)}(\xi)\, ce_2(\eta) \simeq \frac{\lambda}{4} H_0^{(0)}(\sqrt{\lambda} e^{\xi}) \cos 2\eta - \frac{\sqrt{\lambda} e^{-\xi}}{2} H_1^{(1)}(\sqrt{\lambda} e^{\xi}) \cos 2\eta + \ldots$$

$$\lambda = \frac{l\varkappa^2 c^2}{4}, \quad c^2 = a^2 - b^2, \quad N = \frac{Eh^3}{12(1-\nu^2)}.$$

Substituting from (5) in the basic formulae for stresses and moments gives

$$T_\xi \simeq \left(\frac{2}{ce^{\xi}}\right)^2 \left(1 + 2e^{-2\xi}\cos 2\eta\right) \left\{\frac{\partial^2 \varphi}{\partial \eta^2} - 2e^{-2\xi}\cos 2\eta \frac{\partial \varphi}{\partial \eta} + \left(1 + 2e^{-2\xi}\cos 2\eta\right) \frac{\partial \varphi}{\partial \xi}\right\}. \qquad (6)$$

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$$S \simeq -\left(\frac{2}{ce^{\xi}}\right)^2\left(1+2e^{-2\xi}\cos 2\eta\right)\left\{\frac{\partial^2\varphi}{\partial\xi\partial\eta}-\left(1+2e^{-2\xi}\cos 2\eta\right)\frac{\partial\varphi}{\partial\eta}-\right.$$

$$\left.-2e^{-2\xi}\sin 2\eta\frac{\partial\varphi}{\partial\xi}\right\},$$

$$T_\eta \simeq \left(\frac{2}{ce^{\xi}}\right)^2\left(1+2e^{-2\xi}\cos 2\eta\right)\left\{\frac{\partial^2\varphi}{\partial\xi^2}-\left(1+2e^{-2\xi}\cos 2\eta\right)\frac{\partial\varphi}{\partial\xi}+\right. \qquad (6)$$

$$\left.+2e^{-2\xi}\sin 2\eta\frac{\partial\varphi}{\partial\eta}\right\},$$

$$M_\xi \simeq -N\left(\frac{2}{ce^{\xi}}\right)^2\left(1+2e^{-2\xi}\cos 2\eta\right)\left[\frac{\partial^2 w}{\partial\xi^2}+\nu\frac{\partial^2 w}{\partial\eta^2}-(1-\nu)(1+\right.$$

$$\left.+2e^{-2\xi}\cos 2\eta)\frac{\partial w}{\partial\xi}+2(1-\nu)e^{-2\xi}\sin 2\eta\frac{\partial w}{\partial\eta}\right].$$

[Abstractor's note: Symbols not explained]. From the law of dis-

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D251/D303

Stress concentration in a ...

tribution of cross-sectional forces, the boundary conditions on the contour are

$$T_{\xi} = 0, \; S = 0, \; M_{\xi} = 0, \; \tilde{Q} = \frac{qb}{a + b}\left(a - \frac{c}{a+b}\cos 2\eta\right) \qquad (7)$$

and hence the unknown coefficients may be evaluated. There is 1 Soviet-bloc reference[Abstractor's note: Apparently a translation from N.V. MacLachlan, "The Theory [illegible] Application of Mathié [illegible]unctions].

ASSOCIATION: Instytut mekhaniky AN URSR (Institute of Mechanics, As UkrSSR)

SUBMITTED: July 6, 1960

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

24220

S/198/61/00[illegible]005/003/015
D274/[illegible]03

AUTHORS: Savin, G.M., Van Fo Fy, and Buyvol, V.M. (Kyyiv)

TITLE: Applying the method of successive approximations to the problems of shallow-shell theory

PERIODICAL: Prykladna mekhanika, v. 7, no. 5, 1961, 487 - 495

TEXT: A spherical, shallow shell of radius R is considered, having m circular holes of arbitrary radius. The shell is under the internal pressure q = const, and the edges of the holes are subjected to a system of external forces. One of the holes is considered as principal and the influence of the holes far from the principal hole (at a distance of at least two hole-diameters) is neglected. It is assumed that k holes are so near that they cannot be neglected. The centers of the holes are denoted by O_j ($j = 1, 2, \ldots, k$), the hole-radiuses by a_j, and the distances between the hole-centers -- by r_{ij}. The stress-strain state in the neighbor-

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hood of a hole is determined by the solution of

$$\nabla^2 \nabla^2 \Phi + i \nabla^2 \Phi = 0, \qquad \Phi = w + ig\varphi, \tag{1}$$

where w and φ are the bending- and stress functions, $g = \sqrt{12(1 - \nu)^2/Eh^2}$, h being the thickness of the shell. If the shell has one hole only, the stressed state can be determined by means of the function

$$\Phi = C \ln x + (A + iB) H_0^{(1)}(x \sqrt{i}). \tag{2}$$

The arbitrary constants C, A, B are found from the boundary conditions, and $H_0^{(1)}$ is Hankel's function of the first kind. To completely solve the problem, it is necessary to take also into consideration the contribution (to the stressed state) of a constant external pressure. If the shell has k + 1 holes which are at a sufficient distance from each other, the stressed sate is determined by the function

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$$\Phi_0 \approx ig\varphi^0 + \sum_{j=0}^{k} \Phi^{(j)} \qquad (4)$$

where φ^0 is the stress function for an unpunctured shell, and $\Phi^{(j)}$ is analogous to (2). If the holes are near to each other, function (4) has to be considered as the zeroth approximation only. Thereby the boundary conditions will not be satisfied completely at each of the holes. This discrepancy in the boundary conditions is narrowed down by introducing the function

$$\Phi_1^* = \Phi_0 + \sum_{j=1}^{k} (\Phi_{0i}^{(1)} + \Phi_{i0}^{(1)}).$$

This function can be considered as the solution of the problem in the first approximation, if k holes which are near the principal hole, do not interact. As, however, these holes do interact, other

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Φ-function have to be introduced to remove the inconsistencies in the boundary conditions. Hence the function which solves the problem in the first approximation is

$$\Phi_1 = ig\varphi^0 + \sum_{j=0}^{k} \Phi^{(j)} + \sum_{j=1}^{k} (\Phi_{0j}^{(1)} + \Phi_{j0}^{(1)} + {}^{(j-1)}\Phi_{0j}^{(1)} + {}^{(j+1)}\Phi_{0j}^{(1)}).$$

All the functions Φ have to be determined as solutions of the basic Eq. (1). Taking into consideration the conditions at infinity, such a solution is expressed by

$$\Phi = igC \ln x + \sum_{n=1}^{\infty} x^{-n} (a_n e^{i\alpha_n} \cos n\theta + b_n e^{i\beta_n} \sin n\theta) + \sum_{n=0}^{\infty} (c_n e^{i\varphi_n} \cos n\theta + d_n e^{i\psi_n} \sin n\theta) H_n^{(1)} (x \sqrt{i}), \quad (5)$$

where a, b, c, d, α, β, φ, ψ, and C are unknown constants by means

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of which the boundary conditions can be satisfied. In the second approximation, the effect of forces denoted by $\Phi_{j0}^{(1)}$ is taken into account. The process of successive approximations converges and a practically exact solution of the problem is given by the function

$$\widetilde{\Phi} = ig\varphi^0 + \sum_{i=0}^{k} \Phi^{(i)} + \sum_{j=1}^{k} \sum_{i=1}^{\infty} (\Phi_{0j}^{(i)} + \Phi_{j0}^{(i)} + {}^{(j-1)}\Phi_{j0}^{(i)} + {}^{(j+1)}\Phi_{j0}^{(i)}). \qquad (6)$$

As an example, a shell with two circular holes of radiuses a_1 and a_2 is considered. In this case, solution (5) reduces to

$$\widetilde{\Phi} = igC \ln x + \sum_{n=1}^{\infty} x^{-n} (A_n + iB_n) \cos n\vartheta + \sum_{n=0}^{\infty} (C_n + iD_n) H_n^{(1)} (x\sqrt{i}) \cos n\theta. \qquad (7)$$

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The arbitrary constants in Eq. (7) are determined from a system of linear algebraic equations. Thereupon, the formulas for the stressed state are derived. Figures show the distribution of stresses and moments at a cross section through the hole-center line. It is evident from these curves that, under certain conditions, the disturbences in the stress field due to the holes, do not reach further than a diameter's length. The stress function T_θ is most significant with respect to magnitude and distribution of stresses. There are 5 figures and 3 references: 2 Soviet-bloc and 1 non-Soviet-bloc (in translation).

ASSOCIATION: Instytut mekhaniky AN URSR (Institute of Mechanics AS UkrSSR)

SUBMITTED: June 30, 1961

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Savin, G.

Savin, G. The generalized problem of Kirsch. Rep. ~~Ukrainian~~ Acad. Sci. Ukrainian SSR no. 3–4, 75–84 (1946). (Ukrainian. Russian and English summaries)

A large isotropic elastic plate contains a circular hole into which an isotropic elastic ring of different material is inserted or soldered. The plate is stretched in one direction by uniform forces applied at some distance from the hole. The author uses the form of solution given by Muschelishvili to obtain the distribution of stresses in the ring. It is found that, when the ring is not soldered into the hole, the stress concentration on the boundary is not reduced. On the basis of some numerical calculations recommendations are made for achieving a uniform distribution of stress on the boundary of the hole. *I. S. Sokolnikoff* (Los Angeles, Calif.)

Source: Mathematical Reviews, Vol. 8 No. 6

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.N., professor.

Effect of lining on the stress distribution around narrow underground mine workings. Zap.Inst.gor.mekh. AN URSR no.5:3-44 '47.(MLRA 8:4)
(Mining engineering)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.N., professor.

The pressure of rocks on the lining of vertical shafts. Zap.Inst. gor.mekh. AN URSR no.5:45-51 '47. (MLRA 8:4)
(Shaft sinking)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G. N.

Savin, G. N. and Fleyshman, N. P. - "The effect of elastic rings soldered into a circular opening of a horizontal multiple-intensity field," Doklady Akad. nauk. Ukr. USSR No. 5, 1948, p. 17-26, (In Ukranian, resume in Russian)

SO: U-4355, 14 August 53 (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

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SAVIN, G. N

Savin, G. N. and Fleyshman, N P. - "The bend of a cantilever beam having a circular opening reinforced by an elastic ring," Doklady Akad. nauk Ukr. SSR, No. 5, 1948, p. 27-41, (In Ukranian, resume in Russian)

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

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SAVIN, G. N.

Savin, G. N. - "Minimum safety coefficient of mining hoisting cable," Doklady Akad. nauk Ukr. SSR, No. 6, 1948, p. 30-33, (In Ukranian, resume in Russian)

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

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SAVIN G. N.

Savin, G. N. and Fleyshman, N. P. - "The bend of thin plates having a circular opening reinforced at the end with a flexible ring," Doklady Akad nauk Ukr. SSR, No. 6, 1948, p. 34-44, (In Ukranian, resume in Russian), - Bibliog: 7 items

SO: U-4355, 14 August 53, (Letopis 'Zhurnal 'nykh Statey, No. 15, 1949)

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SAVIN, G.M.

Dynamic theory for the calculation of mine hoisting cables. Dop.AN URSR no.4:32-40 '48. (MIRA 9:9)

1.Diysniy chlen AN URSR.2.L'vivs'kiy viddil Institutu girnichoi mekhaniki Akademii nauk Ukrains'koi RSR.
(Wire rope) (Mining machinery)

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SAVIN, G.M.; PAVLENKO, G.L.

Fatigue limit for wires of steel hoisting cables. Dop.AN URSR no.4: 27-31 '48. (MLRA 9:9)

1.Diysnniy chlen AN URSR (for Savin).2.L'vivs'kiy viddil Institutu girnichoi mekhaniki Akademii nauk Ukrains'koi RSR.
(Wire rope)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.M.; PARASYUK, O.S.

Effect of a field of inhomogeneous stress upon the plastic zone in the neighborhood of an aperture. Dop.AN URSR no.3:41-50 '48. (MLRA 9:9)

1.Disniy chlen AN URSR (for Savin).2.L'vivs'kiy viddil Institutu girnichoi mekhaniki Akademii nauk Ukrains'koi RSR.
(Strains and stresses)

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SAVIN,G.M.,PARASYUK,O.S.

DEFORMATIONS (MECHANICS)

Plastic areas in the vicinity of an aperture in a plane with nonuniform stress.
Nauk.zap.L'viv. 12 No. 3, 1949.

Monthly List of Russian Accessions, Library of Congress November 1952 UNCLASSIFIED.

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SAVIN, G.M.; FLEYSHMAN, N.P.

Bending of a thin triangular plate with a reinforced circular aperture. Dop.AN URSR no.1:3-10 '49. (MLRA 9:9)

1.Diysniy chlen AN URSR (for Savin).2.L'vivs'kiy viddil teorii pruzhnosti Institutu matematiki AN URSR.
(Elastic plates and shells)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G. N.

Savin, G. N., and Parasyuk, O. S. Some elastic-plastic problems with linear hardening. Ukrain. Mat. Zurnal 2, no. 1, 60–69, (1950). (Russian)

The authors consider a plastic material behaving according to the Hencky yield condition in a state of plane plastic strain. They seek solutions of the resulting equations which also satisfy the equilibrium conditions of the elastic plane strain problem. Solutions are found corresponding to the action of a concentrated force on a semi-infinite plane, a couple applied at the origin of an infinite plane, and an elastic-plastic problem previously solved by Galin [Akad. Nauk SSSR. Prikl. Mat. Meh. 10, 367–386 (1946); these Rev. 8, 241]. It is shown that other solutions exist.

H. I. Ansoff (Santa Monica, Calif.).

Source: Mathematical Reviews, Vol 13 No.10

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.N.; BESSONOV, V.G.

Rate of propagation of an elastic wave in steel wire-rope. Ukr. mat.zhur. 2 no.1:118-126 '50. (MLRA 7:10)

(Vibration) (Wire rope)

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SAVIN, G. N.

Savin, G. N., and Parasyuk, O. S. On some elastic-plastic problems with linear hardening. Doklady Akad. Nauk SSSR (N.S.) 70, 585–588 (1950). (Russian)

Stress distributions are determined for the plane strain problem which simultaneously satisfy the elastic problem as well as the plastic deformation equations of Hencky with linear hardening. The usual substitution of variables of St. Venant's theory is used, except that the intensity of shear stress $k(x, y)$ is now a function to be determined from the solutions and the mean normal stress in the plane ω is a harmonic function. General solutions are obtained for $k(x, y)$, which reduce to well-known solutions of plastic-elastic boundary value problems for special values of the arbitrary constants. *H. I. Ansoff.*

Source: Mathematical Reviews, 1950 Vol 11 No. 8

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SAVIN, G. N.

USSR 600

~~Strains and Stresses~~

"Concentration of stresses near openings." Reviewed by S.G. Lekhnitskiy, V.M. Panferov. Prikl mat i mekh.16 no 1, 1952

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

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SAVIN,G.N.; SAVRUK,M.A.

Stresses in bars and plates near circular and alveollar holes. Nauch. zap. IMA L'viv.fil. AN URSR no.1:77-92 '53. (MLRA 8:11)
(Strains and stresses) (Elastic plates and shells)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN,G.N.; FLEYSHMAN,N.P.

Axisymmetric bending of a reinforced-rim annular plate of variable thickness. Nauch.zap. IMA L'viv.fil. AN URSR no.1:93-98 '53.
(Elastic plates and shells) (MLRA 8:11)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

KHARA, I.S.; SAVIN, G.M., diisnyi chlen Akademiyi nauk URSR.

One method for the approximate conformal transformation of polygonal sides into a single circle. Dop.AN URSR no.4:289-293 '53. (MLRA 6:8)

1. Kharkivs'kyi politekhnichnyi instytut imeni V.I.Lenina. 2. Akademiya nauk URSR (for Savin). (Transformations (Mathematics))

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

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KHARA, I.S.; SAVIN, G.M., diisnyi chlen Akademiyi nauk URSR.

Investigation of stress concentration during dilation in infinite plates weakened by arched or trapezoid apertures. Dop.AN URSR no.4:294-298 '53. (MLRA 6:8)

1. Kharkivs'kyi politekhnichnyi instytut imeni V.I.Lenina. 2. Akademiya nauk URSR (for Savin). (Elastic plates and shells)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

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KHARA, I.S.; SAVIN, G.M., diisnyi chlen Akademiyi nauk URSR.

Investigation of stress concentration in thick plates beside arched and trapezoid apertures supported by absolutely rigid rings. Dop.AN URSR no.4: 299-303 '53. (MLRA 6:8)

1. Kharkivs'kyi politekhnichnyi instytut imeni V.I.Lenina. 2. Akademiya nauk URSR (for Savin). (Elastic plates and shells)

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BONDAR, M.H.; SAVIN, H.M., diysnyy chlen.

Electric model testing of vibrations and stability of rod systems. Dop.AN URSR no.5:375-382 '53. (MLRA 6:10)

1. Akademiya nauk Ukrayins'koyi RSR (for Savin). 2. Dnipropetrovs'kyy instytut inzheneriv zaliznychnoho transportu im. L.M.Kahanovycha (for Bondar).
(Electric testing)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

KARANDYEYEV, K.B.; SHVETS'KYY, B.Y.; SAVIN, H.M., diysnyy chlen.

Problem of automatic alternating current bridges. Dop.AN URSR no.5:362-364 '53. (MLRA 6:10)

1. Akademiya nauk Ukrayins'koyi RSR (for Savin). 2. Instytut mashynoznavstva ta avtomatyky Akademiyi nauk Ukrayins'koyi RSR (for Karandyeyev and Shvets'kyy). (Electric resistance)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

Savin, G.N.

KISELEV, V.I.; SAVIN, G.N., professor, doktor, retsenzent; MAKAROV, V.S., professor, doktor, retsenzent; MATVEYEV, M.A., redaktor; YEZDOKOVA, M.L., redaktor; VAYNSHTEYN, Ye.B., tekhnicheskiy redaktor

[Hoists for deep mines] Pod"emnye ustanovki dlia glubokikh shakht. Moskva, Gos. nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1954. 227 p. [Microfilm] (MLRA 7:10)

1. Vitse-prezident AN USSR (for Savin)
(Mine hoisting)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.N.

26

1362. Savin, G. N., The dynamic stresses in a mine winding rope when lifting a load (in Russian), *Ukrain. mat. Zh.* **6, 2,** 126-139, 1954; Rev. no. 412. *Ref. Zb. Mekh.* 1956.

The problem of determining the dynamic stresses in a winding rope which is wound on to a drum rotating at a given velocity $v_c = f(t)$ is divided into two stages: (1) Removal of the end load Q from the stationary end [illegible] with the given [illegible]

[illegible]

The [illegible] The problem is [illegible] motion of the element [illegible] the rope

$$\frac{q}{g}\frac{d^2X}{dt^2} = -\frac{dT}{\partial x} + q$$

where, in accordance with what has been said above, the function of the stresses

$$T(x,t) = K\frac{\partial u}{\partial x} + \lambda\frac{\partial^2 u}{\partial x \partial t}$$

(λ is the coefficient characterizing the damping of the dynamic stresses in the rope) with the following limiting and initial conditions

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Savin, G. N.

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$$\left(\frac{\partial X}{\partial t}\right)_{x=l} = v_c, \quad u(0,t) = 0$$

$$u(x,0) = \zeta\frac{Q}{K}x + \frac{qx^2}{2K}, \quad \left(\frac{\partial u}{\partial t}\right)_{t=0} = 0$$

(ζ is the nondimensional value indicating the degree of unloading of the winding rope from the end load Q.)

In view of the shortness of time of recording the value r of the end load Q from the stationary end. The problem of finding the function $u(x,t)$ in the first stage of the lift is considerably simplified by neglect of the variation in the length of the rope, and by damping the dynamic stresses in it during the time r. Solving the wave equation which is obtained from this, by D'Alembert's method, author finds the function $u^{(1)}(x,t)$ for the first stage, and the recording time r, and knowing these, he determines the initial values of the required function for the second stage of the lift.

The graphs are given of the relationship of the value $k = cr/l$ to P/Q, ζ and a/g. In this, it is advisable for ease of calculation with the given values of a and ζ according to the given integer values $k = cr/l$ to determine the fractional values P/Q which

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Savin, G. N.

4

Savin, G. N., and Ševelo, V. N. On oscillations of a load hanging from an elastic-viscous cord of variable length. Ukrain. Mat. Ž. 6, 457-462 (1954). (Russian)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G. N.

USSR/Physics - Theory of elasticity

Card 1/1 : Pub. 22 - 12/44

Authors : Savin, G. N., active member of the Acad. of Sciences of the Ukr. SSR

Title : About dynamic stresses of a lifting device of a load

Periodical : Dok. AN SSSR 97/6, 991-994, Aug 21, 1954

Abstract : An analysis of dynamic stresses of a hoisting rope is given. Differential equations expressing the dynamical stresses of the rope are derived and solved. Four references: (1937-1954). Diagram.

Institution The Institute of Mathematics of the Acad. of Sciences of the Ukr SSR

Submitted : ....

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G. N.

Savin, G. N. On the fundamental equations of the dynamics of a shaft-lifting cable. Akad. Nauk Ukrain. RSR. Prikl. Meh. 1 (1955), 5-22. (Ukrainian. Russian summary)

Consider a lifting cable which hangs over a cylinder revolving about a fixed horizontal axis with velocity v. At the lower end B of the cable a load of weight Q is attached which at the beginning of the motion lies on a fixed support. Assume that the lifting of the load proceeds according to a trapezoidal tachogram with constant acceleration. The cable being an elastic viscous string, consider the dynamic pull caused in it during the lifting of the load Q. Let the dynamic pull caused at the lower end B of the cable while the load remains on the support be $T_0=\zeta Q$, where $0\leq\zeta\leq 1$ characterizes the degree of slackness of the lifting cable.

Let the OX-axis be directed downward along the axis of the cable, the origin O being the point C at which the cable starts to wind onto the cylinder. Consider a section of the cable at a point A and let

$$X=\xi-x-u(x,t),$$

where x denotes the unstretched length of the segment AB of the cable, $u(x,t)$ the absolute lengthening of AB and $\xi=BC$ the variable length of the cable. As the cylinder

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SAVIN, GN.

starts to revolve the lifting cable first streches out during an interval of time τ, the load Q remaining fixed on the support (for $\zeta \neq 1$). The load Q will start to move upward only after the dynamic pull at the lower end B of the cable has attained the value Q. During the first phase of the lifting process $\xi = \text{const}$, during the second phase $\xi = \xi(t)$.

The fundamental differential equations of motion for an element of the cable at A and the load Q are

$$\frac{q}{g}\left(\frac{d^2\xi}{dt^2} - \frac{\partial^2 u}{\partial t^2}\right) = -\frac{\partial T}{\partial x} + q, \tag{1}$$

$$\frac{Q}{g}\frac{d^2\xi}{dt^2} = Q - T(0, t) + R, \tag{2}$$

where R is a resistance force and q a constant. The boundary condition at the lower end B of the cable is (3), $u(0, t) = 0$ and at the upper end C is $(\partial X/\partial t)_{x=l} = v$ or

$$\frac{d^2\xi}{dt^2} = \frac{dv}{dt} + \left(\frac{\partial^2 u}{\partial t \partial x}\right)_{x=l}\frac{dl}{dt} + \left(\frac{\partial^2 u}{\partial t^2}\right)_{x=l} \tag{4}$$

(l denotes the normal length of the cable at the instant t). The initial conditions of $u(x, t)$ and $\partial u/\partial t$ for the second phase of the lifting process are

$$u(x, 0) = m_1 x + m_2 x^2, \quad (\partial u/\partial t)_{t=0} = m_3 x, \tag{5}$$

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SAVIN, G N.

$$I = K\left(1 + \frac{\psi}{2\pi}\right)\frac{\partial u}{\partial x}$$

where $\psi = 2\delta$, δ being the logarithmic decrement of damping, found for the given cable from the oscillogram of free vibrations of the attached load, and K is a constant.

In the case of small lifting depths $u(x, t) = x\varepsilon(t)$, and the problem reduces to the integration of an ordinary second order linear differential equation with variable coefficients for $\varepsilon(t)$.

Further, using the idea of the method of moments, the author reduces the equations (1), (2) with the boundary conditions (3), (4) and the initial conditions (5) to an integro-differential system from which certain approximate solutions can be obtained. In particular, if $u(x, t) = x\varphi(t) + x^2\phi(t)$, the problem reduces to the integration of two ordinary second order differential equations with variable coefficients for $\varphi(t)$ and $\phi(t)$ [cf. Savin, Ukrain. Mat. Ž. 6 (1954), 126–139; MR 16, 1060].

E. Leimanis (Vancouver, B.C.).

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.M.; SH[redacted]M.

Effect of imperfect elasticity on the vibration of a cord of changing length in lowering a load. Dop. AN URSR no.3:227-230 '55. (MIRA 8:11)

1. Diysniy chlen Akademii nauk URSR (for Savin) 2. Institut matematiki Akademii nauk URSR.
(Elasticity) (Vibration)

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GRISHKOVA, Nadezhda Petrovna; GEORGIYEVSKAYA, Valentina Vladimirovna; SAVIN, G.N., redaktor; LISENBART, D.K., redaktor; ZHUKOVSKIY, A.D., tekhnicheskiy redaktor

Aleksandr Nikolaevich Dinnik. Kiev, Izd-vo Akademii nauk USSR, 1956. 50 p. (MLRA 9:10)

1. Deystvitel'nyy chlen AN USSR (for Savin)
(Dinnik, Aleksandr Nikolaevich, 1876-1950)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G. N.

Call Nr: AF 1108825
(Cont.)

Transactions of the Third All-union Mathematical Congress Moscow, Jun-Jul '56, Trudy '56, V. 1, Sect. Rpts., Izdatel'stvo AN SSSR, Moscow, 1956, 237 pp. There are 3 references, 2 of which are USSR, and 1 is German.

Savin, G. N. (Kiyev). Some Dynamic Problems for Suspended String of Variable Length. 211

Salekhov, G. S. (Kazan'). Boundary Problems With a Given Solution. 211-212

Sedov, L. I. (Moscow). Congruence Methods in Non-linear Mechanics of Uniform Media. 212

Tikhov, M. N. (Khar'kov). On the Inflow of Central Fluid in a Cylindrical Bed to a Perforated Bore-hole. 212-213

Uflyand, Ya. S. (Leningrad). On the Solution of One Mixed Problem in the Theory of Elasticity for a Halfspace. 213

Frankl', F. I. (Moscow). Subsonic Flow With Local Supersonic Zones. 213-214

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.N. SHEVELO, V.N.; KUZHIY, A.I.

Study of longitudinal vibrations in variable-length strings accounting for internal hysteresis-type friction. Prikl.mekh.2 no.2:133-146 '56. (MLRA 9:10)

1.Institut matematiki Akademii nauk URSR.
(Vibration)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.N.

SAVIN, G.N.; PARASYUK, O.S.

"Asymptotic methods in the theory of nonlinear osciallation" by N.N. Bogoliubov and IU.A. Mitropol'skii. Reviewed by G.N. Savin, O.S. Parasiuk. Ukr. mat. zhur. 8 no.3:339-341 '56. (MLRA 10:9)

(Oscillations)

(Bogoliubov, N.N.) (Mitropol'skii, IU.A.)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G. N.

FEDOROV, Mikhail Mikhaylovich; IL'ICHEV, A.S. redaktor [deceased]; KHOMITSEVICH, K.I., kandidat tekhnicheskikh nauk, redaktor; KUCHEROV, P.S., redaktor; FEDOROVA, Z.M., kandidat tekhnicheskikh nauk, redaktor; KUKHTENKO, A.I., doktor tekhnicheskikh nauk, redaktor; KRYZHANOVSKIY, O.M., kandidat tekhnicheskikh nauk, redaktor SAVIN, G.N., akademik, otvetstvennyy redaktor; ZIL'BAN, M.S., redaktor izdatel'stva; RAKHLINA, N.P., tekhnicheskiy redaktor

[Selected works in two volumes] Izbrannye trudy; v dvukh tomakh. Kiev, Izd-vo Akad. nauk USSR. Vol.1. 1957. 274 p. (MLRA 10:6)

1. Akademiya nauk USSR (for Savin). 2.Clen-korrespondent Akademii nauk SSSR (for Il'ichev). 3. Chlen-korrespondent Akademii nauk USSR (for Kucherov)
(Mine hoisting)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, ~~G.N.~~ G. N.

The Ninth International Congress on Applied Mechanics. Visnyk AN URSR 28 no.4:55-60 Ap '57. (MIRA 10:6)

1. Akademik Akademii nauk URSR.
(Brussels--Mechanics, Applied--Congresses)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.M.

KOVALENKO, A.D.; KORNOUKHOV, M.V.; PISARENKO, G.S. [Pysarenko, H.S.]; SAVIN, G.M. [Savin, H.M.]; SERENSEN, S.V.

Engineering research developed by the institutes of the Academy of Sciences of the Ukrainian S.S.R. in 1956. Prykl.mekh. 3 no.4: 487-490 '57. (MIRA 11:2)

(Ukraine--Engineering research)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.N.

SAVIN, G.M. (Kiiv)

Development of investigations on the theory of elasticity, applied mechanics and strength of material in the Ukraine during the 40 years of Soviet regime. Prykl.mekh.3 no.3:241-259 '57. (MIRA 10:12)

1. Institut matematiki AN USSR.
(Ukraine--Elasticity) (Ukraine--Mechanics, Applied)
(Ukraine--Strength of materials)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.M.

Ninth international congress on applied mechanics (September 5-13, 1956). Prykl. mekh. 3 no.1:113-115 '57. (MLRA 10:5)
(Brussels--Mechanics, Applied--Congresses)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SOV/112-58-2-2546

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1958, Nr 2, p 121 (USSR)

AUTHOR: Savin, G. N.

TITLE: A Report of the AS UkrSSR (Doklad AN UkrSSR)

PERIODICAL: V sb.: Sessiya AN SSSR po nauchnym problemam avtomatiz.proizva. Kompleksn. avtomatiz. proiz. protsessov. M., AS USSR, 1957, pp 253-262

ABSTRACT: A short characterization of activities of AS UkrSSR institutes in the domain of automation and telemechanics is presented.

Card 1/1

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.N., otv.red.; FAYNERMAN, I.D., zam.otv.red.; GREBEN', I.I., red.; ZHMUDSKIY, A.Z., prof., doktor tekhn.nauk, red.; SHISHLOVSKIY, A.A., red.; AMELIN, A., red.; PATSALYUK, P., tekhn.red.

[New methods of inspection and flaw detection in the machinery and instrument industries] Novye metody kontrolia i defektoskopii v mashinostroenii i priborostroenii. Kiev, Gos.izd-vo tekhn.lit-ry USSR, 1958. 264 p. (MIRA 12:10)

1. Nauchno-tekhnicheskoye obshchestvo priborostroitel'noy promyshlennosti. Ukrainskoye respublikanskoye pravleniye. 2. Gosuniversitet im. Shevchenko, Kiyev (for Zhmudskiy, Shishlovskiy).
(Machinery--Construction) (Instruments--Construction)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.N. [Savin, H.M.] (Kiyev); GOROSHKO, O.A. [Horoshko, O.O.] (Kiyev)

Nonrebounding of a load during abrupt changes in the lifting force. Prykl.mekh. 4 no.3:263-268 '58. (MIRA 13:8)

1. Institut stroitel'noy mekhaniki AN USSR.
(Lifting and carrying)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.N. [Savin, H.M.] (Kiyev); SHEVELO, V.N. [Shevelo, V.M.] (Kiyev); YUSHCHENKO, A.A. [IUshchenko, O.A.] (Kiyev)

Vibrations of a ponderable incompletely elastic string (rope) of variable length. Prykl. mekh. 4 no.4:384-389 '58. (MIRA 11:12)

1.Institut matematiki AN USSR.
(Elastic rods and wires)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.M. [Savin, H.M.], akademik; FESHCHENKO, S.F.

Asymptotic solution of a class of partial differential equations with variable boundary conditions. Dop. AN URSR no.6:588-594 '58. (MIRA 11:9)

1. Institut matematiki AN USSR. 2. AN USSR (for Savin).
(Differential equations, Partial)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

KOVALENKO, A.D.; KORNOUKHOV, M.V. [deceased], akademik; PEN'KOV, O.M.; PISARENKO, G.S. [Pysarenko, H.S.]; SAVIN, G.M. [Savin, H.M.], akademik; SERENSEN, S.V., akademik; FILIPPOV, A.P.

Development of the problem "Scientific fundamentals of force and plasticity" by the institutes of the Academy of Sciences of the Ukrainian S.S.R. Prykl. mekh. 4 no. 3:356-358 '58. (MIRA 13:8)

1. Institut stroitel'noy mekhaniki AN USSR, chlen-korrespondent AN USSR (for Kovalenko). 2. Laboratoriya gidravlicheskikh mashin AN USSR, chlen-korrespondent AN USSR (for Filippov). 3. AN USSR i Institut stroitel'noy mekhaniki AN USSR (for Kornoukhov). 4. Institut metallokeramiki i spetssplavov AN USSR, chlen-korrespondent AN USSR (for Pisarenko). 5. AN USSR i Institut mashinovedeniya AN USSR (for Serensen). 6. Institut gornogo dela AN USSR, chlen-korrespondent AN USSR (for Pen'kov). 7. AN USSR i Institut matematiki AN USSR (for Savin).

(Plasticity)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

PATON, Yevgeniy Oskarovich [deceased]; SAVIN, G.N., akademik, otv.red.; DOBROKHOTOV, N.N., akademik, red.; KHRENOV, K.K., akademik, red.; BELYANKIN, F.P., akademik, red.; PATON, B.Ye., akademik, red.; KAZANTSEV, B.A., red.izd-va; REMENNIK, T.K., red.izd-va; KADASHEVICH, O.A., tekhn.red.

[Selected works in three volumes] Izbrannye trudy v trekh tomakh. Kiev, Izd-vo Akad.nauk USSR. Vol.1. [Study of the performance of bridge span structures] Issledovaniia raboty proletnykh stroenii mostov. 1959. 578 p. (MIRA 12:10)

1. AN USSR (for Savin, Dobrokhotov, Khrenov, Felyankin, B.Ye.Paton). (Bridges, Iron and steel)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G. N.

24(6) SOV/21-59-7-5/25

AUTHOR: Savin, H.M., (Savin, G. N.) Member AS UkrSSR, Horoshko, O.O. (Goroshko, O.A.), Bezsonov, V.H. (Bessonov, V. G.)

TITLE: Determination of Stresses in a Reeling Elastic Rope

PERIODICAL: Dopovidi Akademii Nauk Ukrains'koi RSR, 1959, Nr 7, pp 712-717 (UkrSSR)

ABSTRACT: The authors investigated stress distribution in the reeling part of ropes. The equilibrium conditions for the thread on the felloe are determinated from equation $\frac{\partial^2 u(x,t)}{\partial t^2} - \frac{\beta}{R} \cdot \frac{\dot{u}}{|\dot{u}|} \cdot \frac{\partial u(x,t)}{\partial x} = 0$.

It is shown that, at winding-up speeds of v_c = constant, limited by condition

$$0 \leq v \leq -\frac{R\nu}{\beta\pi} \ln (1 - p^2),$$

the dynamic stresses in the reeling part are almost completely damped by friction forces. At winding-up speeds definited by inequality

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SOV/21-59-7-5/25

Determination of Stresses in a Reeling Elastic Rope

$$v \geqslant \frac{p \omega R}{\beta},$$

the slipping of the thread on the felloe vanishes. There are 23 mathematic formulas and 4 diagrams

ASSOCIATION: Instytut budivel'noyi mekhaniky AN UkrRSR (Institute of Civil Engineering AS UkrSSR)

SUBMITTED: March 16, 1959

Card 2/2

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SOV/21-59-8-4/26

16 (1), 24 (5)

AUTHORS: Savin, H. M. (Savin, G. M.), Member, AS UkrSSR and Horoshko, O. O. (Goroshko, O.A.)

TITLE: Elastic Parameters of a Naturally Twisted Thread

PERIODICAL: Dopovidi Akademii nauk Ukrains'koi RSR, 1959, Nr 8, pp 828 - 832 (USSR)

ABSTRACT: In this article, the authors describe the properties of real ropes to untwist on longitudinal tension by introducing their mechanical model which is a naturally twisted thread. The term "naturally twisted thread" means a mechanical object endowed with longitudinal and torsional rigidity and with properties to untwist on longitudinal tension and to lengthen on untwisting. The principal parameters of the model are: EF and B - longitudinal and torsional rigidity of the thread respectively - and k, the coefficient of untwisting. The following formulae are taken as a basis for determining the elastic parameters experimentally:

$$EF = \frac{Q_2 - Q_1}{U_2 - U_1} l_0. \qquad (15)$$

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Elastic Parameters of a Naturally Twisted Thread

$$k = \frac{M_k^{(2)} - M_k^{(1)}}{Q_2 - Q_1} \quad (16) \qquad B = \frac{\Delta M_k}{\Delta \theta (l_0)} l_0 \quad (17)$$

Whereby Q_1, Q_2 stand for loads, $M_k^{(1)}$ and $M_k^{(2)}$ for the volume of the moments, ΔM_k for the increase of the moment, and θ for motionless direction. The above formulae are obtained from the equation for the static equilibrium of the thread

$$\left.\begin{aligned} EF \frac{d^2U}{dx^2} + kEF \frac{d^2\theta}{dx^2} + q = 0 \\ kEF \frac{d^2U}{dx^2} + (B + k^2 EF) \frac{d^2\theta}{dx^2} = 0 \end{aligned}\right\} \quad (9)$$

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Elastic Parameters of a Naturally Twisted Thread

SOV/21-59-8-4/26

Whereby q means the weight of the unit of the length of the thread, and dx - elements of the thread. The elastic properties of twisted ropes were also studied by M. F. Glushko [Ref. 1] who based his experiments on the definition of dependence of the elastic properties of the rope on its geometrical structure. The naturally twisted thread, a mechanical model of a real rope, suggested by the authors, defines the basic properties of twisted ropes of various construction. According to this model, the basic elastic parameters of the rope - the longitudinal and torsional rigidity and the coefficient of torsion - are defined by means of simple mechanical tests independently from its structure. There are 2 tables and 1 Soviet reference.

ASSOCIATION: Institut stroitel'noy mekhaniki AS USSR (Institute of Construction Mechanics of the AS of UkrSSR)

SUBMITTED: March 16, 1959

Card 3/3

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.M. [Savin, H.N.] (Kiyev); SHEVELO, V.N. [Shevelo, V.M.] (Kiyev); YUSHCHENKO, A.A. [IUshchenko, O.A.] (Kiyev)

A system with variable mass. Prykl. mekh. 5 no.4:441-444 '59. (MIRA 13:3)

1. Institut matematiki AN USSR.
(Elastic rods and wires--Vibration)

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

16(1) 05782

AUTHORS: Savin, G.N., Putyata, T.V., Fradlin, B.N., and Shakhnovskiy, S.M. SOV/41-11-4-8/15

TITLE: Nikolay Aleksandrovich Kil'chevskiy (on the Occasion of his 50th Birthday)

PERIODICAL: Ukrainskiy matematicheskiy zhurnal, 1959, Vol 11, Nr 4, pp 431-433 (USSR)

ABSTRACT: This is an appreciation of the merits of the Professor of the Kiyev University N.A.Kil'chevskiy. He was born in 1909, he finished his studies in 1933, canditate dissertation in 1936, doctorial dissertation in 1940. He was a pupil of Professor I. Ya. Shtayerman, Corresponding Member of the Academy of Sciences Ukr.SSR. Since 1944 he is the director of the Chair of Theoretical Mechanics. His special branch: Theory of elasticity. There follows an index of publications with 45 titles and a photo of N.A.Kil'chevskiy.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.N.

report presented at the 1st All-Union Congress of Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb '60.

35. N. M. Borodachev (Kuibeshev): On the solution of the dynamic contact problem for a half-space under conditions of axial symmetry.

36. J. Brilla (Bratislava). Anisotropic plates with discontinuous supports.

37. B. M. Broude (Moscow): On the essential non-linearity of certain problems on column stability.

38. E. G. Buglov (Kiev), S. V. Saransan (Moscow): On the determination of safety factors under alternating random loads.

39. A. V. Burlakov (Kharkov): An experimental investigation of creep of turbine diaphragm models.

40. E. F. Burmistov (Saratov): On the stability of constructionally anisotropic circular ring plates.

41. St. Balan, V. Petcu, S. Bautu (Bucharest): The field of application of chromoplasticity.

42. D. M. Bainberg (Kiev): The state of stress of lamellar systems of regular configuration.

43. V. V. Bainshtok (Moscow): Thixotropic properties of lubricants as basis of their rheological characteristics.

44. G. A. Van-Fo-Fi, G. N. Savin (Kiev): Application of Mathieu functions to the investigation of shells.

45. P. M. Varvak (Kiev): Determination of stresses and deformations in massive bodies.

46. B. V. Bedenev (Gorkii): The flow of bitumens and filled bitumens in pipes.

47. I. I. Vekua, N. I. Muskhelisvili (Tbilisi): Applications of analytic functions in the theory of elasticity.

48. L. Ia. Vinev (Tbilisi), V. V. Pinadshian (Erevan): Experimental investigation of the behavior of excentrically compressed short columns for long loading times.

49. G. V. Vinogradov (Moscow), A. A. Mamekov (Kazan), V. P. Pavlov (Moscow): Investigation of soft plastic bodies under combined states of stress.

50. G. V. Vinogradov, V. P. Pavlov (Moscow): Basic peculiarities of the mechanical properties of plastic lubricants.

51. S. I. Vinokur (Leningrad): Fundamentals of the linear theory of visco-elastic impact.

52. L. I. Vinokurov (Kharkov): The solution of dynamic contact problems for foundations using a simplified model.

53. B. F. Vlasov (Moscow): On the equilibrium equations of thick elastic plates.

54. K. F. Voitkovskii (Iakutsk): The creep of ice and frozen soils under combined stresses.

55. M. P. Volarovich, G. Ia. Voronkov, E. P. Kovalevskii, G. I. Kushman (Moscow): Studies of viscoelastic properties of porous bodies (e.g. peat) by the ultrasonic pulse method.

56. M. P. Volarovich (Moscow), A. Kh. Kim (Minsk): The plane flow of a visco-plastic medium between two planes forming an acute angle.

57. M. P. Volarovich, K. N. Opokin (Moscow): Kinematics and dynamics of the flow of visco-plastic dispersed media past bodies of different shapes.

58. A. N. Volkov (Moscow): On the analysis of a short closed cylindrical shell.

59. S. D. Volkov, N. A. Klinskikh (Sverdlovsk): On the distribution of elastic constants in quasi-isotropic polycrystaline media.

60. I. I. Vorovich (Rostov-na-Donu): A statistical method in the stability theory of shells.

61. I. I. Vorovich (Rostov-na-Donu), A. S. Kozmodamanskii (Saratov): On stress concentration in a plane with an infinite number of holes.

62. S. P. Viazmenskii (Leningrad): Foundations of the general engineering theory of elastic beams.

63. S. S. Vialov (Moscow): The laws of deformation of ice.

64. S. S. Vialov (Moscow): The laws of motion of ice crusts and the theory of visco-plastic flow based on research in the Antarctic.

65. N. D. Galilaev (Leningrad): A method of obtaining polynomial stress and displacement functions.

66. K. Z. Galimov (Kazan): A contribution to the theory of the finite deformations of thin shells.

67. M. F. Galin (Moscow): The propagation of elastic-plastic bending and shear waves in the axisymmetrical deformations of shells.

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

report presented at the 1st All-Union Congress of Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb '60.

68. M. S. Ganeyev, Kh. M. Mushtari, R. G. Surkis (Kazan): On a method of solving problems of the bending theory of shallow shells with the use of electronic digital computers.

69. G. T. Gasanov, S. G. Gurbanov (Baku): Solution of unsteady problems of hydrodynamics of viscous and visco-plastic fluids.

70. A. V. Gemmerling (Moscow): An approximate stability analysis of frames in the elastic-plastic range.

71. G. A. Gemiev (Moscow): Some problems concerning the plane flow of compressible plastic media.

72. G. P. Geondzhian (Erevan): On a problem of elastic-plastic torsion of an anisotropic shaft.

73. I. S. Gerasimov (Moscow): A dynamic problem for a conical shell.

74. M. V. Gzovskii (Moscow): Tectonophysics — a new domain of application of mechanics to geological problems.

75. M. V. Gzovskii, D. Osokina (Moscow): Simulating of processes of plastic deformation and rupture of solids with great variations of time and size.

76. V. G. Gmoshinskii (Moscow): Development of a theory of pressure in rocks with the use of the methods of continuum mechanics.

77. I. I. Golberg (Moscow): Some generalizations of the basic equations of visco-elasticity.

78. I. I. Golberg (Moscow): The propagation of longitudinal waves in a visco-elastic rod.

79. A. M. Goldberg, V. G. Korchin (Leningrad): Theoretical and experimental methods of design of the locks of the Stalingrad hydroelectric power plant.

80. I. I. Goldenblat (Moscow): A generalized theory of plastic flow.

81. I. I. Goldenblat (Moscow): The theory of finite deformations of anisotropic elastic media.

82. I. I. Goldenblat, N. A. Nikolenko (Moscow): A general creep theory of shells.

83. A. L. Goldenveiser (Moscow): Development of the theory of thin elastic shells.

84. A. L. Goldenveiser (Moscow): Asymptotic integration of the equations of the theory of thin elastic plates.

85. M. I. Gorbunov-Posadov (Moscow): Determination of the elastic zone boundary in a sand foundation, which approaches failure under the pressure of a rigid footing.

86. A. Ia. Gorgidze (Tbilisi): On secondary effects in torsion and bending of nearly prismatic bars.

87. L. V. Gorelik (Leningrad): On filtration force and viscous friction in water-saturated sand under dynamical conditions.

88. O. A. Gorytko, G. N. Savin (Kiev): Contribution to the dynamics of inelastic one-dimensional continua of variable length.

89. A. S. Grigoriev (Moscow): On elastic-plastic deformation of non-homogeneous plates and disks.

90. A. S. Grigoriev (Moscow): Equilibrium of membrane shells of revolution for large displacements and strains.

91. G. S. Grigorian (Erevan): Creep design of thin orthotropic sandwich shells.

92. S. S. Grigorian (Moscow): The general equations of soil dynamics and some particular solutions.

93. B. V. Grilitskii (Lvov): Torsion of an elastic layer.

94. A. N. Gruzin (Leningrad): Stress concentration in notched tension strips under large creep deformations.

95. V. S. Gubanov, V. I. Mossakovskii (Dnepropetrovsk): The pressure of an annular die on an elastic half space.

96. I. I. Gudushauri (Tbilisi): Effect of shear stresses in the design of foundation strips of arbitrary rigidity under arbitrary loads.

97. N. G. Gulkanian (Erevan): The bending of a hollow prismatic rod with a rectangular hole.

98. A. N. Gutkin (Moscow): The limit equilibrium of an elastic-plastic disc that is compressed between rough rigid plates.

99. S. S. Gutman (Leningrad): A plane multiply-connected region subjected to a conservative body force and non-uniform heating.

100. S. G. Gutman (Leningrad): The equilibrium of a hollow cone under its own weight and hydrostatic pressure on one of its surfaces when the axis of the cone has an arbitrary orientation.

101. V. M. Darevskii, P. I. Kuznetsov (Moscow): Buckling of cylindrical cantilever shell with ring-stiffened edge under internal pressure.

SAVIN G. N.

APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5"

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SAVIN, G.M. [Savin, H.M.], akademik, otv.red.; REMENNIK, T.K., red.izd-va; LIBERMAN, T.R., tekhred.

[State of strain in rolling mill and mine mechanism gear wheels] Napruzhenyi stan kolis prokatnykh staniv ta shakhtnykh mekhanizmiv. Kyiv, Vyd-vo Akad.nauk URSR, 1960. 169 p. (MIRA 13:12)

1. Akademiya nauk USSR, Kiyev. Institut mekhaniki. 2. AN USSR (for Savin).
(Rolling mills) (Hoisting machinery)

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SAVIN, G.M. [Savin, H.M.], akademik, otv.red.; REMENNIK, T.K., red. izd-va; LISOVETS, O.M. [Lysovets', O.M.], tekhn.red.

[Problems of thermal stresses in the manufacture of electric power machinery] Zadachi termopruzhnosti v energomashynobuduvanni. Kyiv, 1960. 174 p.

(MIRA 13:6)

1. Akademiia nauk URSR, Kiyev. Instytut budivel'noi mekhaniky.
2. AN USSR (for Savin).

(Electric machinery)

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MUSHTARI, Kh.M., red.; ALUMYAE, N.A., red.; BOLOTIN, V.V., red.; VOL'MIR, A.S., red.; GANIYEV, N.S., red.; GOL'DENVEYZER, A.L., red.; ISANBAYEVA, F.S., red.; KIL'CHEVSKIY, N.A., red.; KORNISHIN, M.S., red.; LUR'YE, A.I., red.; SAVIN, G.N., red.; SACHENKOV, A.V., red.; SVIRSKIY, I.V., red.; SURKIN, R.G., red.; FILIPPOV, A.P., red.; ALEKSAGIN, V.I., red.; SEMENOV, Yu.P., tekhn. red.

[Proceedings of the Conference on the Theory of Plates and Shells] Trudy Konferentsii po teorii plastin i obolochek, Kazan', 1960. Kazan', Akad. nauk SSSR, Kazanskii filial, 1960. 426 p. (MIRA 15:7)

1. Konferentsiya po teorii plastin i obolochek, Kazan', 1960. 2. Moskovskiy energeticheskiy institut (for Bolotin). 3. Kazanskiy khimiko-tekhnologicheskiy institut (for Ganiyev). 4. Institut mekhaniki Akademii nauk USSR (for Kil'chevskiy). 5. Kazanskiy gosudarstvennyy universitet (for Sachenkov). 6. Kazanskiy filial Akademii nauk SSSR (for Svirskiy).
(Elastic plates and shells)

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SAVIN, G.N. [Savin, H.N.], akademik; GOROSHKO, O.A. [Horoshko, O.O.]

Equation for the motion of a naturally twisted thread of varying length. Dop.AN URSR no.6:726-729 '60. (MIRA 13:7)

1. Institut mekhaniki AN USSR. 2. AN USSR (for Savin).
(Rope)

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"APPROVED FOR RELEASE: 07/13/2001 CIA-RDP86-00513R001447330004-5

SAVIN, G.N. [Savin, H.M.] akademik; GOROSHKO, O.A. [Horoshko, O.O.]

Integrodifferential equations for the motion of objects of variable dimensions. Dop.AN URSR no.7:892-898 '60. (MIRA 13:8)

1. Institut mekhaniki AN USSR. 2. AN USSR (for Savin).
(Motion)

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SAVIN, G.N., akademik; VAN FO FY, G.A.

Stress concentration in a spherical she around an elliptical aperture of slight eccentricity. Dop.AN URSR no.10:1340-1343 '60. (MIRA 13:11)

1. Institut mekhaniki AN USSR. 2. AN USSR (For Savin).
(Elastic plates and shells)

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G.N.

AUTHORS: Savin, ~~H.M.~~, Academician UkrSSR, and Feshchenko, S.F.

TITLE: On the dynamic forces in an elastic-viscous thread of variable length

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR. Dopovidi, no. 11, 1960, 1469 - 1475

TEXT: The present article proposes an asymptotic method of solution for an ascent of three stages 1) uniformly accelerated motion 2) uniform motion 3) uniformly retarded motion. A system of linear differential equations of the form

$$A(\tau,\varepsilon)\frac{d^2q}{dt^2}+\varepsilon C(\tau,\varepsilon)\frac{dq}{dt}+B(\tau,\varepsilon)q=P(\tau,\varepsilon) \qquad (1)$$

is considered, with the initial conditions $(q)_{t=0} = q_0$, $\left(\frac{dq}{dt}\right)_{t=0} = \dot{q}_0$ [Abstractor's note: $\dot{q}_0$ is incorrectly written as q_0] where

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q and $P(\tau, \varepsilon)$ are n-dimensional vectors, and $A(\tau, \varepsilon)$, $C(\tau, \varepsilon)$ and $B(\tau, \varepsilon)$ are square matrices of the n-th order of the form

$$A(\tau, \varepsilon) = \sum_{s=0}^{\infty} \varepsilon^s A_s(\tau), \quad C(\tau, \varepsilon) = \sum_{s=0}^{\infty} \varepsilon^s C_s(\tau), \quad B(\tau, \varepsilon) = \sum_{s=0}^{\infty} \varepsilon^s B_s(\tau), \tag{2}$$

where $\tau = \varepsilon t$, and ε is a small positive parameter. Is is assumed that the matrices $A_s(\tau)$, $C_s(\tau)$, $B_s(\tau)$ and the vectors $P_s(\tau)$ ($s = 0, 1, 2, \ldots$) have derivatives of all orders with respect to τ, on the segment $0 \leq \tau \leq L$. The matrices $A_0(\tau)$ and $B_0(\tau)$ are symmetric-. A system of linear equations is considered, where λ_ν is the ν-th root of the equation

$$\mathrm{Det}/B_0(\tau) - A_0(\tau)/ = 0 \tag{4}$$

(assuming the λ_ν all different). The corresponding functions $\mu_{\nu j}(\tau)$ (ν, $j = 1, 2, \ldots, n$) are assumed to satisfy

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where

$$D(\tau,\varepsilon)=\sum_{s=1}^{\infty}\varepsilon^s D_s(\tau),\quad \Omega(\tau,\varepsilon)=\sum_{s=0}^{\infty}\varepsilon^s\Omega_s(\tau),$$
$$\Pi(\tau,\varepsilon)=\sum_{s=0}^{\infty}\varepsilon^s\Pi_s(\tau),\quad H(\tau,\varepsilon)=\sum_{s=0}^{\infty}\varepsilon^s H_s(\tau) \qquad (8)$$

[Abstractor's note: "of the vector $P_\xi(\tau)$" is incorrectly written for "the vectors $P_s(\tau)$" in the text]. Theorem 2: If $A_s(\tau)$, $B_s(\tau)$, $C_s(\tau)$ and the vectors $P_s(\tau)$ satisfy the conditions of Theorem 1, then for arbitrary $L > 0$ there can be found some ε_0 $(0 < \varepsilon \leqslant \varepsilon_0)$ and a constant C_m^* independent of ε so that the inequalities

$$/q - q_m/ \leqslant C_m^* \varepsilon^m, \qquad /\dot{q} - q_m/ \leqslant C_m^* \varepsilon^m \qquad (12)$$

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